

WHAT IS CLAIMED IS:

[c01] 1. A component comprising:

at least one wall having an inner portion and an outer portion;

a plurality of pins extending between said inner and outer portions of said wall, wherein said pins define a mesh cooling arrangement comprising a plurality of flow channels; and

a plurality of turbulators disposed on at least one of said inner and outer portions of said wall.

[c02] 2. The component of Claim 1, wherein said pins are characterized by a height-to-diameter ratio of about less than or equal to two ( $H/D \leq 2.0$ ).

[c03] 3. The component of Claim 2, wherein said pins are characterized by a height-to-diameter ratio of about less than one ( $H/D < 1.0$ ).

[c04] 4. The component of Claim 3, wherein said turbulators are formed on only one of said inner and outer portions of said wall.

[c05] 5. The component of Claim 3, wherein said turbulators are formed on both of said inner and outer portions of said wall.

[c06] 6. The component of Claim 3, wherein said turbulators extend between respective pairs of said pins in a direction transverse to a cooling flow.

[c07] 7. The component of Claim 3, wherein said turbulators extend between respective pairs of said pins (18) and are oriented at an angle relative to a cooling flow.

[c08] 8. The component of Claim 3, wherein a first subset of said turbulators extend between respective pairs of said pins and are oriented at a first angle relative to a cooling flow, wherein a second subset of said turbulators extend

between respective pairs of said pins and are oriented at a second angle relative to the cooling flow, and wherein the first and second angles intersect.

[c09]            9.        The component of Claim 3, wherein respective pairs of turbulators form chevron turbulators on the respective one of said inner and outer portions of said wall.

[c10]            10.       The component of Claim 9, wherein at least one of said chevron turbulators has an apex oriented upstream relative to a cooling flow.

[c11]            11.       The component of Claim 10, wherein each of said chevron turbulators has an apex oriented upstream relative to a cooling flow.

[c12]            12.       The component of Claim 9, wherein at least one of said chevron turbulators has an apex oriented downstream relative to a cooling flow.

[c13]            13.       The component of Claim 3, wherein said pins are characterized by a height-to-diameter ratio within a range of about 0.1 to about 0.3 ( $0.1 \leq H/D \leq 0.3$ ).

[c14]            14.       The component of Claim 3, wherein said pins are circular.

[c15]            15.       The component of Claim 13, further comprising a plurality of dimples located in at least one of said inner and outer portions of said wall.

[c16]            16.       The component of Claim 15, wherein said dimples are located in both of said inner and outer portions of said wall.

[c17]            17.       The component of Claim 15, wherein said dimples are located in said outer portion of said wall.

[c18]            18.       The component of Claim 17, further comprising at least one coating on said outer portion of said wall.

[c19] 19. The component of Claim 18, wherein said coating comprises a thermal barrier coating.

[c20] 20. The component of Claim 18, wherein at least one of said dimples extends through said outer portion of said wall to form a cooling hole, and wherein said coating at least partially covers said cooling hole

[c21] 21. The component of Claim 15, wherein each of said dimples has a center depth of about 0.010 to about 0.030 inches and a surface diameter of about 0.010 to about 0.12 inches.

[c22] 22. The component of Claim 15, wherein at least one of said dimples extends through the respective one of said inner and outer portions of said wall to form a cooling hole.

[c23] 23. The component of Claim 15, wherein none of said dimples extend through said inner and outer portions of said wall.

[c24] 24. A hot gas path component comprising:

at least one wall having an inner portion and an outer portion;

a plurality of pins extending between said inner and outer portions of said wall, wherein said pins define a mesh cooling arrangement comprising a plurality of flow channels, wherein said pins are characterized by a height-to-diameter ratio within a range of about 0.1 to about 0.3 ( $0.1 \leq H/D \leq 0.3$ ); and

a plurality of turbulators disposed on at least one of said inner and outer portions of said wall.

[c25] 25. The hot gas path component of Claim 24, wherein said turbulators extend between respective pairs of said pins in a direction transverse to a cooling flow.

[c26] 26. The hot gas path component of Claim 24, wherein said turbulators extend between respective pairs of said pins and are oriented at an angle relative to a cooling flow.

[c27] 27. The hot gas path component of Claim 24, wherein a first subset of said turbulators extend between respective pairs of said pins and are oriented at a first angle relative to a cooling flow, wherein a second subset of said turbulators extend between respective pairs of said pins and are oriented at a second angle relative to the cooling flow, and wherein the first and second angles intersect.

[c28] 28. The component of Claim 24, wherein respective pairs of turbulators form chevron turbulators on the respective one of said inner and outer portions of said wall.

[c29] 29. The component of Claim 24, further comprising a plurality of dimples located in at least one of said inner and outer portions of said wall.